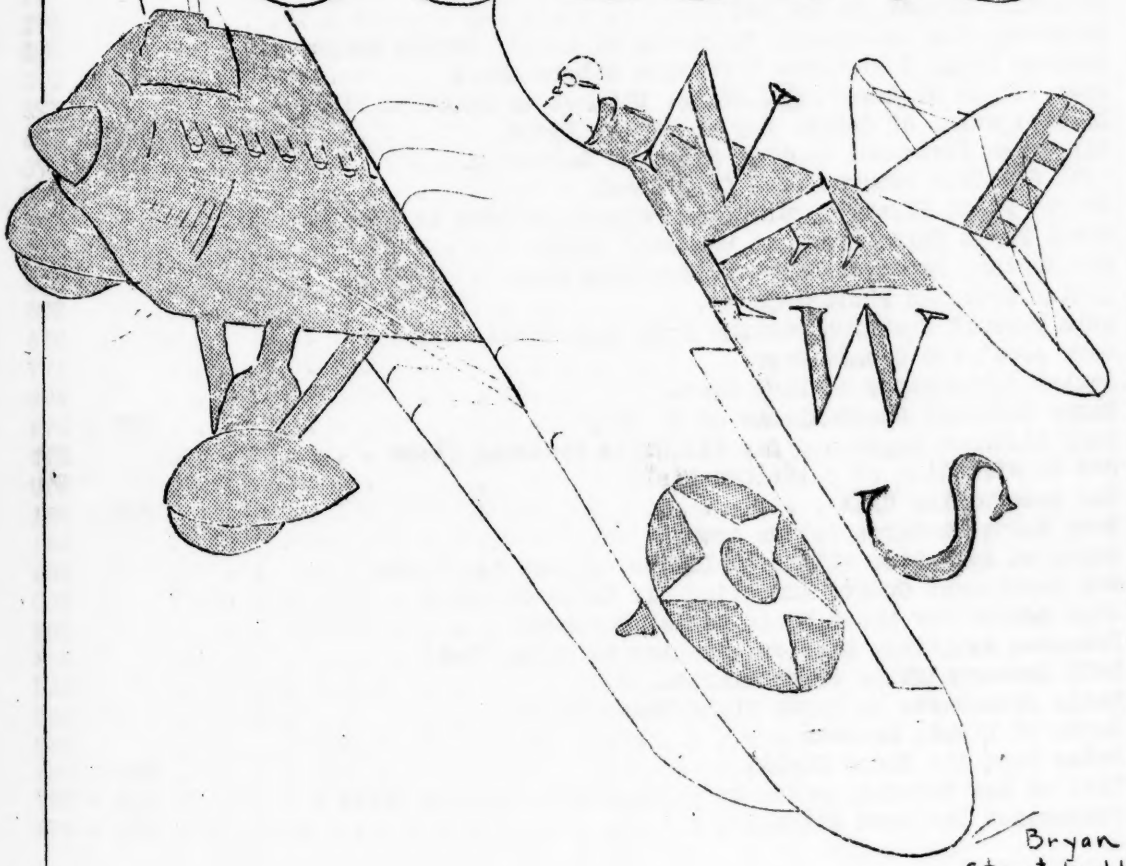
SEP 30 '32 C

AIR CORPS NEWS LETTER.



ISSUED BY THE
OFFICE OF THE CHIEF OF THE AIR CORPS
WAR DEPARTMENT
WASHINGTON, D.C.

VOL. XVI | September 21, 1932 | NO. 11

Table of CONTENTS

	Pages
The National Air Races	364 - 366
Brooks Field Pilots Act as Eyes of Relief Workers	366
International Pilots Visit Wright Field	366
Viewing the Eclipse from Aloft	367 - 371
Attackers Attack Mosquitoes	371
Rockwell Firemen on the Job	371
Relieving the Monotonous Existence of Lonely Forest Ranger	372
Chanute Field Instructor Wins Blue Ribbon Award	372
Fast Flight of Lieut. McClellan, Mitchel to Randolph Field	372
Investigation of Cosmic Ray at Wright Field	373 - 374
Air Corps Personnel Weather Storm at Galveston	374 - 375
17th Squadron returns from Camp Skeel	375
Wright Field Flyers return from Mapping Project in Florida	375
March Field Units Train at Rockwell Field	375
New England Reserves Complete Training Camp	376
Indian Writings Photographed	376
94th Pursuit Squadron returns from Camp Skeel	376
More About the Cosmic Rays	377
Aerial Photography at High Speed	378
Texas National Guard Airmen go in Camp	377 - 378
Long Distance Night and Day Flight in Training Plane	379
New construction at Selfridge Field	379
The Caterpillar Club	380 - 381
Navy Shows Pictures to the Army	381
Extended Avigation Flight by Lieuts. Farman and Stone	381
War Department Orders Affecting Air Corps Officers	382
High Scores for March Field Aerial Marksmen	382
Extended Avigation Mission, Langley to March Field	383
96th Squadron Flies to Wilmington, N.C.	383
Radio Broadcasts by March Field Discontinued	383
Death of Lieut. Sanborn	383
Notes from Air Corps Fields	384 - 395
List of New Material Added to Information Division Files	396 - 397
Inspection Division Notes	398 - 399

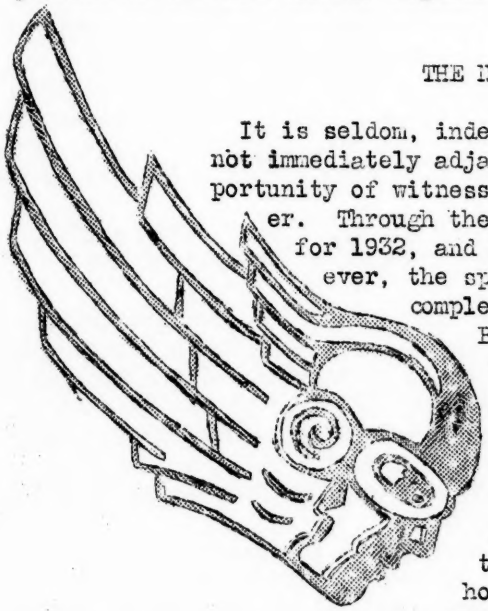
VOL. XVI AIR CORPS NEWS NO.11

Information Division, Air Corps — September 21, 1932 — Munitions Building, Washington, D.C.

The chief purpose of this publication is to distribute information on aeronautics to the flying personnel in the Regular Army, Reserve Corps, National Guard, and others connected with aviation.

Publishers are authorized to reprint material appearing herein, except that portion of the News Letter beginning with Notes from the Fields.

---oOo---



THE NATIONAL AIR RACES

It is seldom, indeed, that those citizens living in places not immediately adjacent to a large Army flying field have the opportunity of witnessing the daily aerial routine of the Army flyer. Through the courtesy of the National Air Race Committee for 1932, and the thoughtfulness of Cliff Henderson, however, the spectators at the National Air Races saw one complete Pursuit Squadron and an honest-to-goodness Bombardment flight go through their daily grind as they would high in the air above their home stations.

The Air Race Committee took care of the costs of operation and the personal expenses of pilots and mechanics for the duration of the Show, and in this way provided the participants with just so many hours of tactical training over and above that allotted at their home stations from appropriations made for that purpose. The Army flyers took part in no races or contests except, perhaps, the contest against possible inaccuracy in their flying maneuvers.

The participants were the following:

17th Pursuit Squadron of the 1st Pursuit Group at Selfridge Field, Mich., with Curtiss P6-E single-seater Pursuiters, with 600 h.p. Curtiss "Conqueror" Prestone-cooled and supercharged engines.

Captain Ross G. Hoyt, Squadron Commander.

Second Lieutenants

Norman D. Sillin	Flight Leader	Norman R. Burnett	Pilot
Donald L. Putt	" "	Lawrence O. Brown	"
Paul M. Jacobs	Engineer Officer	James C. Guthrie	"
John W. Kirby	Pilot	Dan Hughes, Jr.	"
Edwin R. French	"	Clyde A. Parlette	"
Daniel C. Doubleday	"	John D. Pittman	"
Llewellyn O. Ryan	"	Ernest K. Warburton	"
Morley F. Slaght	"	* Roger M. Ramey	Finance Officer
Frederick W. Castle	"	* Jarred V. Crabb	Press Relations Officer
George F. Schlatter	"	* Jesse Auton	Transportation Officer

* Reserve Pilots

Bombardment Flight from the 2nd Bombardment Group at Langley Field, Va.

Captain Robert Olds, Flight Commander, Group Headquarters)
2nd Lieut. William G. Bowyer, co-pilot)

Captain Robert T. Cronau, pilot, 20th Squadron Bomber)
2nd Lieut. Richard J. O'Keefe, co-pilot)

Captain John Paul Richter, pilot, 96th Squadron Bomber)
2nd Lieut. John P. Ryan, co-pilot)

Captain Eugene L. Eubank, pilot, 49th Squadron Bomber)
2nd Lieut. Lawrence S. Kuter, co-pilot)

Captain Ennis C. Whitehead and Lieut. Alfred E. Kessler, Jr., accompanied the Pursuiters, each piloting a transport load of mechanics. The ground crew for the Bombers flew as passengers in the multi-seaters.

Representing the Chief of the Air Corps as Liaison Officer between his office and the Army flyers at Cleveland was Lieut. Charles M. Cummings, of the Training and Operations Division. Having spent some time previously in Cleveland

as Regular Army Instructor with the National Guard Observation Squadron there, Lieut. Cummings was well acquainted with the Air Race Committee Staff, and thus easily and readily smoothed out the little details of cooperation between the military establishment and the Race Committee.

Lieut. Roland Birnn, of the Information Division, Office of the Chief of the Air Corps, was the announcer of all Army events and, in addition, arranged a 30-minute broadcast by the Air Corps over a large N.B.C. network, at 1:00 p.m. (E.S.T.) on Labor Day, through the kind efforts of Tom Manning, the local N.B.C. representative.

On Saturday, August 27th, the Bombing flight flew in to Cleveland, picking up its weather reports on their radio when thirty miles out of Langley Field, and gradually converging on Cleveland's radio range beacon. The weather could have been better over the Alleghenies, but each weather report gave a higher ceiling and rising barometer, which is always encouraging to the cross-country flyer. On the following day the Pursuiters arrived from Selfridge Field, after a short and uneventful trip, and parked their airplanes with the Bombers at the Army pit to the left of the grandstand line.

The Air Race Committee left nothing undone for the Army flyers' comfort. Officers and enlisted men were provided accommodations at several of the prominent hostelries of Cleveland.

Realizing that 40 minutes' flying a day was too short a practice period for their pilots, Captains Olds and Hoyt arranged for a "warming up" period of about an hour each noon, wherein combined tactics of Pursuit vs. Bombardment were indulged in over the lake front near the city proper. To the Pursuiters from Selfridge Field, removed as they are from contact with Bombardment aviation, this was a rare treat, indeed. It is a bit different to practice an assault on a flight of real Bombing planes than on another Pursuit or Training plane formation which simulates a bombing flight.

Just as welcome was the sight of these tactics to the residents of Cleveland and vicinity. Other visiting Army flyers in uniform were often plied with questions by spectators regarding the work of the Air Corps flyers in the air.

Flying over the airport, in view of the crowds at the Races, the Pursuiters held forth daily during the afternoon, and the Bombers in the evening, in addition to their noon-day combined practice. The Pursuiters flew an 18-ship formation, keeping three of their pilots on the ground in reserve. Just as interesting to the spectators as the perfectly aligned formations was the shifting of the squadron from one formation to another, and the manner in which the individual pilots, the elements and flights formed on the leader of the next largest group. Among the many formations flown were the flights in line, elements in echelon, and the massed diamond and wedge formation. The most thrilling, from a groundling's viewpoint, was the entire squadron flipping over, element by element, in a 90-degree diving turn and reforming into their regular squadron formation as they continued their screaming dive on an imaginary enemy in the air or on the ground.

At night, promptly at 8:30 p.m., a formation of three Bombers put in their appearance over the grandstands and went through a series of changing formations and maneuvers. A fourth Bomber usually stayed on the ground in reserve and acted at times as a ground radio station for the Bombers aloft. The pilots and co-pilots alternated responsibilities, for this was as much flying training as if it had been carried on at their home stations. After a 15-minute period over the airport, the Bombers retired to the city lake-front where their practice continued, during which time a fireworks display was held at the field. The display was followed by a simulated attack on a miniature village set up on the airport, in which troops of the Ohio National Guard (Infantry) attacked the village held by the enemy, after the Army Bombers had gone over on the split-second prearranged schedule and subdued the village by laying of imaginary "eggs."

Tuesday, August 30th, was Army Day at the Races, whereupon the rest of the First Pursuit Group from Selfridge Field flew down to Cleveland and combined with the 17th Squadron there to practice a Group problem in attack of a Bombing formation. Described by the Selfridge Field Correspondent to the News Letter, the description of the flying follows:

"On August 30th, a date designated as "Army Day" at the National Air Races at Cleveland, the 1st Pursuit Group, under the leadership of Major Gilkeson, Group Commander, took part in the program by passing through some of the

the formation and combat training flying which must be performed by Air Corps units.

All units of the 1st Pursuit Group were present for the demonstration. The 17th Squadron, Captain Hoyt commanding, had flown their P-6E's to Cleveland on the 28th, to remain for the duration of the Races. The P-12E's of the 27th and the B/J P-16's of the 94th Squadron flew down from Selfridge on the morning of the 30th to join the 17th. (The 27th is commanded by Captain R.C.W. Blessley, and the 94th by Captain A.B. Ballard).

The demonstration took the form of a regular 'Group problem,' and this fitted in well with the training program of the Group. The Pursuit squadrons were to cooperate in attacking an enemy Bombardment formation, the 'enemy' in this case being represented by a flight of four big Bombers from the Second Bombardment Wing of Langley Field. As a preliminary to the actual air battle, several close drill and review formations were flown by each squadron. Then when the Bombers flew over the Cleveland Airport, the battle began, and the Bombers were attacked again and again by criss-crossing flights of P-12E's, P-6E's and P-16's. There were 51 Pursuit planes in the air trying to 'get' the Bombers, and to the people in the stands at the Airport the air battle was a thrilling and impressive sight.

That Cleveland and the visitors to the National Air Races were pleased by the opportunity of seeing something of what the Air Corps is doing is well attested by the articles and editorials in the Cleveland papers. As one newspaper said: 'The Cleveland Plain Dealer calls the thrill provided by the army fliers the greatest of the air races to date. The awesome sound of the superb air flotilla not only created a tingle down the spines of some 25,000 persons gathered at the airport, but caused all Cleveland to pause and stare up into the hot sky.' And: 'To the Selfridge Field flyers, it was just another day's work. They went up into a bumpy sky, did their day's work, and came home. But to the thousands that saw them, it was a thrilling, never-to-be forgotten example of man's mastery of the air.'"

And while we are on the subject of the National Air Races, we should not forget the work of our fellow service pilots - the Marines. The Navy did not participate this year, but the 6th Observation Squadron of Marines from Quantico, Va., under the command of Lieut.-Col. Ross E. Rowell, gave a wonderful exhibition of cross-over turns by sections, with a climax of actual dive-bombing of the circular target in front of the grandstands.

They were flying Curtiss "Hell-Divers," and each day after their squadron formation had strung out into a Lufberry Circle, the circle would suddenly break with the leader diving out and down for the circle, dropping a small practice loaded bomb as he dove, and pulling up to let the spectators see the precision of his hits. Following him came the others, one by one, until the crowd got a good idea of one phase of "bush warfare" from the air.

---oOo---

BROOKS FIELD PLANES ACT AS EYES OF RELIEF WORKERS

Four planes from Brooks Field, San Antonio, Texas, played a big part in the rescue of and the sending of food to families marooned by the Rio Grande flood waters. Acting as the "eyes" of the relief forces, the planes flew up and down the flood areas of the Rio Grande Valley, locating marooned families and directing relief parties to them. The relief parties moved by boat, carrying food and clothing.

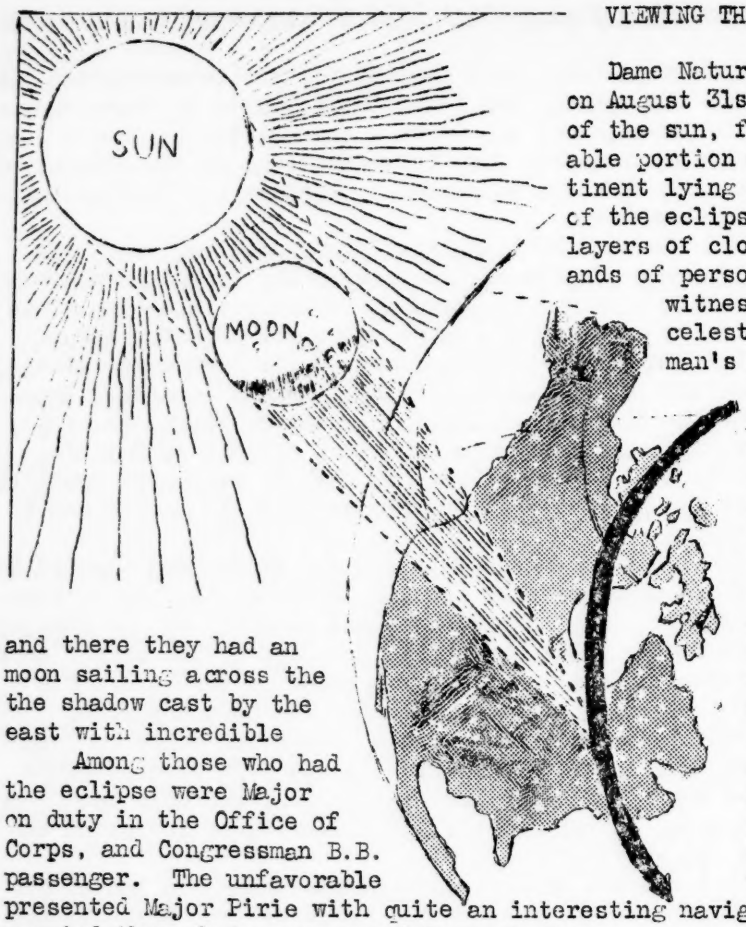
Lieuts. Howard C. Denison and W.B. Walner, Air Reserve, were forced to abandon one of the bases of relief operation when the flood waters inundated the municipal airport four miles west of McAllen. A civilian plane at the field was badly damaged because its owner, not trained in night flying, was unable to take the plane off the ground.

Two Brooks Field planes, manned by Lieuts. H.C. Stelling, L.J. Conners and Carl A. Brandt, K.H. Greeson, operated from Brownsville, Texas. Lieuts. Denison and Wallner operated from McAllen, from an old Army field west of the town.

---oOo---

At the close of the Cleveland Air Races, several of the International pilots visited Wright Field, Dayton, spending a day in going through the laboratories. They were Lieut. Assolant, France; Lieut. Zotti, Italy; Lieut. Atcherly, England; Colonel George Kossowski, Poland, and Lieut. d'Abreu, Portugal.

VIEWING THE ECLIPSE FROM ALOFT



Dame Nature was extremely perverse on August 31st, the day of the eclipse of the sun, for the sky over a considerable portion of the North American continent lying in the path of the totality of the eclipse was obscured by solid layers of clouds, thus depriving thousands of persons of the opportunity to witness this unusual and rare celestial phenomenon. One of man's greatest inventions, however, the airplane, was not to be denied. The few who were fortunate enough to have at their command one of these sight-seeing chariots experienced the thrill of a lifetime by the simple expedient of ascending above the clouds, and there they had an unobstructed view of the face of the sun, and saw moon sweep to the south-east with incredible speed.

Among those who had a ringside seat during the eclipse were Major John H. Pirie, Air Corps, on duty in the Office of the Chief of the Air Corps, and Congressman B.B. Harlan, of Dayton, his passenger. The unfavorable weather conditions, however, presented Major Pirie with quite an interesting navigation problem, which was carried through to a successful conclusion.

Major Pirie and his passenger took off from Bolling Field, D.C., on Tuesday, August 30th, landed at Newark, N.J., for servicing, and then proceeded to Fort Ethan Allen, Vt., on Lake Champlain. They planned to take off from this ancient Army post the next day, shortly before the start of the eclipse, and fly eastward to the vicinity of Guildhall, Vt., about 85 miles distant.

As before stated, on the day of the eclipse the sky was overcast. Right above Fort Ethan Allen, however, there was a big hole in the clouds, over a mile in diameter. Taking off at 2:25 p.m., Major Pirie climbed above the clouds, the tops of which were at an altitude of about 2,000 feet, and headed due east. This was the only rift in the clouds within the vision of the airmen, and they noted that the top surface of the clouds continued to rise. At about 3:15 p.m., Major Pirie calculated he was at Guildhall at about 10,000 feet altitude, and that the top of the clouds was at about 9,000 feet. At that time the eclipse had nearly reached totality and, in order to be able to observe it as many seconds as possible, Major Pirie turned southeast at 3:20, moving directly down the path of the eclipse.

At 3:25, the airmen could distinctly see the shadow of totality approaching rapidly from the northwest. It grew so dark that it was necessary to switch on the navigation lights, and Mr. Harlan in the rear seat was unable to see the shutter adjustments of his camera. Three or four minutes before the total eclipse, the entire horizon in all the 360 degrees appeared just like a brilliant sunset, the shadows of the various cloud banks giving off a varied assortment of colored effects.

Major Pirie had with him a motion picture camera, and both he and Mr. Harlan took photographs just before, during and just after the total eclipse. They could distinctly see the stars blinking in the sky. After the shadow cast by the moon caught up with them, they followed down its path for about three minutes until it passed them and swept away rapidly in the opposite direction.

Before going aloft, Major Pirie carefully studied the weather maps and, while it was calm on the ground, he calculated that at 10,000 feet the wind would probably be from the west and blowing at the rate of at least 20 miles per hour. Receiving reports that there were some broken clouds to the south, he turned his plane a little to the west of south, about 190 degrees, and flew in that direction for 35 minutes. No openings in the clouds were to be

seen, and the tops became higher and much more dense. There was no cause for alarm, however, as the plane had a four hours' gas supply. At about that time it was realized that it would not be advisable to proceed southward any further. Earlier in the day a radio broadcast was received to the effect that there were broken clouds in the eastern part of New York State. Major Pirie turned and flew directly west, intending, if possible, to come down in the vicinity of the Hudson River, and then fly down to New York. Ten minutes later a small hole was visible in the clouds, but on looking down only the tops of mountains could be discerned, the clouds resting directly on them.

After flying for about 35 minutes longer, Major Pirie saw a large hole in the clouds, about a mile across, and underneath a river which he supposed was a stream about half way between Connecticut and the Hudson. There being no more holes in the clouds visible in any direction, he pointed his plane downward and found he could fly down across this river even though the clouds were completely down on the mountains on either side. He checked his location and concluded he must be on the Connecticut River at about Woodsville, Vt. Because of the low visibility not much could be done in the way of definitely checking his position. Flying over a town he saw, much to his joy, the name of Brattleboro, Vt., painted on a roof in large letters.

From Brattleboro, Major Pirie procoeded directly to Hartford, Conn., arriving there at 5:30 p.m. He figured that the wind at 10,000 feet was blowing at a velocity nearer to 40 miles per hour than at 20 miles per hour originally estimated, which probably accounted for the fact that he was between 30 and 40 miles farther to the east than he anticipated.

Reaching Hartford, he found the entire Connecticut National Guard Squadron at the airport, this organization just having gone through some exercises. He took the opportunity of locking over their airplanes and hangars and found the equipment in the very best condition, and as good as he had seen at any National Guard station. Following this inspection, he and Congressman Harlan accepted an invitation from the Guard officers to attend the regular dinner of the organization scheduled for that night. They remained at Hartford overnight and reached Washington the following evening.

In connection with radio reception, Major Pirie switched his radio receiver to the broadcast band, and in the period before, during and after the eclipse he listened to the broadcast concerning it which proved of great value and help, since advance information was imparted to them as to what they could look for. It was very noticeable that for about 15 or 20 minutes during the period of the eclipse the radio reception was much stronger and exceptionally clear.

In ascending to an altitude of 27,000 feet above sea level, Captain Albert W. Stevens, premier aerial photographer of the Army Air Corps, and 1st Lieut. Charles D. McAllister, pilot, viewed the eclipse from the highest vantage point of any of the other observers who went aloft for that purpose. According to newspaper reports, a total of 61 airplanes took the air for this special occasion. Lieut. McAllister piloted a Fairchild F-1A photographic plane, powered by a "Wasp" engine equipped with a supercharger geared to make 14 revolutions to one of the engine propeller.

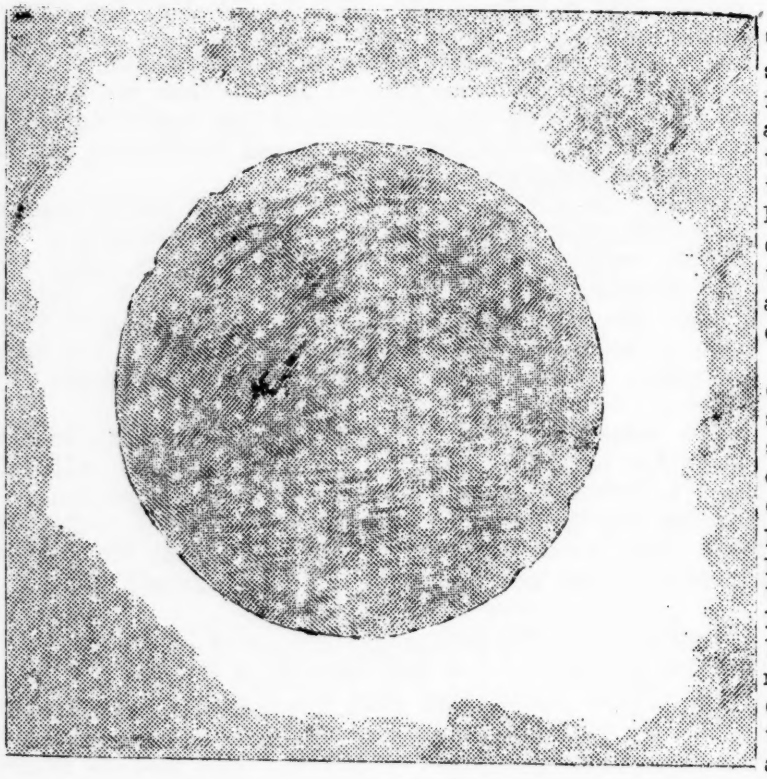
Captain Stevens took up with him three types of cameras, one with long focal length to shoot the corona; one of medium focal length and the third with a short focal length. Only the medium focal length camera was equipped with a ray filter. The shutters were slowed down to give an exposure of one-seventh of a second. This proved to be sufficient to obtain photographs of the moon shadow, using both the medium and short focal length camera. A faster exposure could have been used on the corona. Negatives were secured of the shadow moving across the clouds which show the character of the shadow very distinctly. With these negatives made a few seconds apart, the passage of the shadow can be noted from cloud to cloud.

In addition to the cameras, a device was carried for measuring the intensity of cosmic rays at high altitudes. This device is described by the Materiel Division correspondent elsewhere in this issue. Captain Stevens stated that since cosmic rays vary immensely with increase of altitude they offer the possibility of making altitude measurements through the varying intensity of the rays themselves.

The flight of Captain Stevens and Lieut. McAllister to the scene of the totality of the eclipse was sponsored by the National Geographic Society, which defrayed all the expenses incident to same. In reporting upon the eclipse,

Captain Stevens likened the phenomenon to a "Celestial hurdle race staged only for eyes that could view it from miles above the clouds. For 30 miles he and Lieut. McAllister watched the approaching great dark spot of shadow moving at a speed greater than that of a rifle bullet, as it topped cloud bank after cloud bank, apparently sinking to earth between the clouds. The cloud masses which almost ruined the observations of many astronomical expeditions in the New England area were actually a help to the National Geographic Society expedition, providing a splendid screen for Captain Stevens' observations. He made exposures of the approaching shadow at 5-minute intervals and is confident that some of his plates will show the curvature of the rushing shadow, a photographic feat never before successfully accomplished.

From 27,000 feet above sea level, Captain Stevens said, conditions for observing the sun itself were ideal. The delicate colors of the corona and prominences were visible in their full glory. A number of photographs were taken. To identify points around the sun's disk, he adopted in his report to the National Geographic Society the device of indicating the positions by comparison to those of an hour hand in its travels around a clock face.



"The corona," he said, "had a very marked extension or protuberance, giving a very sharp point at a position, relative to the sun, corresponding to the position of the hour hand at half-past 10 on a clock face. At the position corresponding to 4 and 5 o'clock, there were other protuberances.

At totality the entire corona had sprung into sight very much as if some one had snapped an electric switch. The color of the corona was a pale white. The 5 o'clock protuberance had a rose tint. The long one at 10:30 was a delicate bluish white. The maximum extension of the longest protuberance was about the diameter of the sun away from its disk. The balance of the corona extended about one-quarter of the sun's diameter, the protuberance at 4 and 5 o'clock being about one-third of the sun's diameter.

At the moment of the reappearance of the sun's disk the sun appeared as a point of light. At high altitude even this pinprick of light is so dazzling that it cannot be viewed by the naked eye. The corona instantly disappeared. As soon as the sun became uncovered even slightly the visible surface seemed to be more intense in appearance than when the sun as a whole is viewed ordinarily.

Before totality the shadow was seen advancing as a broad grayish-purple area with softened edges. It was definitely determined to be the moon shadow when it was about 30 miles away. Owing to the broken character of the cloud formation, the advance of the edge of the shadow from one cloud bank to the next cloud bank was distinctly marked. The most remarkable aspect of the shadow, visibly, was the appearance of the far edge. Near the horizon, it had a saffron color. Between the observer and the horizon the air appeared of an indigo color. The color of the horizon line can best be described as being that of steel just before it is ready to melt. It may also be described from five miles in the air above a layer of clouds as being half way between an orange and lemon color or as a little lighter than a yellow warning traffic signal.

Under the airplane could be seen the dark surface of the earth. The clouds directly underneath the airplane were platinum colored. After totality the shadow passed out to sea, where there were fewer clouds, and where it was soon

lost against the dark background of the ocean. This condition was exactly the same as the appearance of the shadow of the moon observed by me on the clouds of Honey Lake, Nevada, about two years ago, where it was also much more distinct on its approach than when it receded."

Captain Stevens reported an unusual phenomenon which appeared 15 minutes before totality. It was a formation that appeared to be made up of streamers of light like long columns extending from the clouds earthward. He believes that it was caused by the sharper projective power of the sun when its area was reduced. The effect was recorded photographically.

Some extremely unique and interesting airplane observations of the solar eclipse on August 31, 1932, were made from above the clouds over Salem, Mass., by Captains Hugh M. Elmendorf and Harlan W. Holden, who are on duty in the Office of the Chief of the Air Corps.

The flight to Massachusetts to view the eclipse was not decided upon until about 11:15 on the morning of August 31st. Thirty-five minutes later the two officers hopped off from Bolling Field in a radio-equipped O-38. The proposed destination was near the tip of Cape Cod but, due to rather disheartening weather condition reports from New England points, received during the flight to New York, it was decided to proceed to Boston where, reports stated, there were broken clouds. The cloudy conditions which prevailed over Southern New England were first encountered as the flyers reached the southern coast of Connecticut, the clouds being so low it was deemed advisable to follow the coast line looking for better conditions. At New Haven, the airplane was turned toward Hartford, where a stop of three minutes was made to inquire relative to conditions further along the route. Learning that there was a 700 foot ceiling at Stafford Springs, which was the low point, the flight was continued. There was none too much space between the top of the Connecticut ridges and the clouds for the next 40 miles, but after that conditions improved rapidly. Near Milford, Mass., a thin spot showed in the clouds and, knowing it was clear over Boston, the airplane was pushed up through to above the cloud level at 4,000 feet. The upper level of the clouds was nearly as smooth as a table, only a few slight mounds, approximately 5 or 10 feet high, pushing up above the surface.

From this setting the two officers began their observations of the eclipse, which at that time had reached probably about 20%, the airplane in the meantime being headed towards Boston. About 15 minutes later the airplane reached the eastern ridge of the cloud bank, directly over Boston, and then its nose was turned northward towards Salem. Each officer had one lens of his goggles lined with a piece of camera film, which made it easier to continue observations while still performing other duties connected with flying the airplane and working the radio.

The officers had hoped to view the eclipse from a point as near as possible on the boundary line of the zone of totality, but they missed this mark by being short of this line by approximately 2 or 3 miles. From the time the airplane left the vicinity of Boston until the time the eclipse had about 50% passed its total phase, the airplane had proceeded along the edge of the cloud bank at approximately 10,000 feet altitude. This position gave the flyers a chance to see the effect of the reflection on the white upper surface of the clouds, on the ground through the holes in the broken clouds, and on the ocean itself a little farther to the east. The white upper surface of the clouds turned a pale grayish color, taking on that well known tinge which is seen on the faces of those who have not enjoyed their air rides. Looking down through the holes in the clouds was like peering into the mouth of a deep pit, and the only objects visible were those of very light color. Out to the eastward there was a distinct black shadow, showing the path of totality, and where it crossed over the clouds the edge of the shadow was plainly visible.

Just before reaching the vicinity of Boston, coils were changed in the radio receiving set in order to pick up the broadcast reports on the eclipse being sent out from points in New Hampshire. As the eclipse progressed, there was a noticeable increase in the strength of the radio signals, and the improvement in the clarity was even more noticeable. Even with poor fitting headsets the broadcast came in so clearly that both officers were able to follow every word of the description being broadcasted from the more northern point on the path of the eclipse. Prior to the eclipse and after it had passed, there was considerable interference over the radio, which made complete concentration necessary in order to hear what was being said.

The airplane was landed at the Boston Airport about 4:15 p.m., and immediately after being refueled the return trip was started to Mitchel Field. Low visibility was again encountered on the flight across Massachusetts and Connecticut, it being necessary several times to turn the airplane back when clouds completely obscured the path. The return trip from Mitchel Field to Washington was delayed about two hours, due to severe thunder storms all along the line between Trenton, N.J. and Wilmington, Delaware. A more favorable weather report was received just before 9:00 p.m., which allowed the flyers to clear.

On the return trip the officers had several lucky breaks. Big thunder storms at three different points just failed to block them off, and landing at the home station was made at 11:00 p.m.

"Biggest Show on Earth!" Crowds rushing by water, rail, auto and airplane to witness the total eclipse of the sun. That was the spectacle that presented itself August 31st.

Captain Joseph A. Wilson, Commanding Officer of the Boston Airport, led a formation of five planes of the Air Corps Reserves to Bretton Woods, N.H., where they were guests of the management of the Mt. Washington Hotel. The Reserves ascended 16,000 feet over Mount Washington and observed the eclipse from this altitude. The spectacle was certainly worth the effort. The shadow caused by the eclipse appeared and disappeared in a second.

At the top of the clouds they saw a sort of "pool of mist" as one described it. It gave the impression of water suspended at quite an altitude. One of the Reserve officers decided to explore, dove towards the pool, and was suddenly seen to veer to one side. He later told the rest of the group that he could have sworn another ship was flying straight into him from the mist. It was evidently the reflection of his own ship, even to the Air Corps insignia.

Regardless of the fact that fur lined boots and heavy flying clothes were worn, all were very uncomfortable during the flight at this altitude. The Reserves returned to Boston feeling they had accomplished two things, namely, cross-country flying practice and witnessing the total eclipse of the sun.

---oOo---

ATTACKERS ATTACK MOSQUITOES

Besides training for war, the Third Attack Group finds time to assist in mosquito-control work. After helping Dr. C.P. Coogle, Mararriologist, in experiments in mosquito extermination, the following letter was received by the Commanding Officer of Fort Crockett, Texas:

"Please permit me to again thank you for your kindness and cooperation in our mosquito destruction studies in the Galveston coastal areas.

A thorough examination and count was made of our test mosquitoes. The first group dosed with Sulphur Trioxide showed stupefication from one to six hours and a survival of all mosquitoes for three days. Lot Number Two dosed with Ttan Chlorine solution did not fare so well. More than one half of them were dead after six hours and none survived the three-day period. Those dosed with Pyrethrum solution were all dead within six hours. Mr. Hopkins, our Engineer, is compiling a chart which he will show you during his next visit to Galveston.

Please extend our grateful appreciation to Lieutenant Crosher and Lieutenant Wheeler for their assistance and most gracious cooperation. We feel that this is the beginning of a new chapter in mosquito-control work, and with our combined ideas we feel very optimistic and that we may be able to solve the pest-mosquito problem.

Very truly yours,
Dr. C.P. Coogle, Malariologist,
U.S. Public Health Service Medical Officer in Charge of Field Party"

---oOo---

Quick work on the part of the Rockwell Field Fire Department on the morning of August 15th averted what might otherwise have been a serious and costly accident. The right motor of Y1-B4 airplane #30-344 burst into flames immediately after the plane had effected a landing. After a fast, hard run with their apparatus, the firemen, with the aid of the plane's crew, succeeded in subduing the flames before they reached dangerous proportions. The firemen displayed some real ability and headwork in fighting the fire, and are further commended for their quick response to the alarm.

RELIEVING MONOTONOUS EXISTENCE OF LONELY FOREST RANGER

MARCH Field claims the distinction of a unique friendship started between a lonely lookout ranger on Santiago Peak and the flyers from the Field. Perched on his lofty summit south of Corona, where he keeps constant vigil for fires in the Cleveland National Forest, Percy C. Everett, a Forest Service lookout man, is being kept in touch with the outside world by his aviator friends whom he has never seen except as they flew over.

During the past year, Everett has taken a keen delight in studying the training tactics and the equipment flown in the vicinity of March Field. From his vantage point on top of the highest point for many miles around, he can imagine himself a mighty general commanding the destinies of the nation by his control over the Army Air Corps, But one feature is lacking in his command. His communication system is extremely ineffectual. Mail arrives once a month. He has no radio,and telephone calls must be held to an absolute minimum because of expense. Consequently, in between mails, his only contact with the outside world is through what he sees from his lookout point and the reading material frequently dropped to him from the air by March Field flyers.

The forest is closed to hikers because of the fire menace, and so no visitors ever reach the mountain summit. The area used as a dropping ground is a narrow trail winding up to the top of the jagged peak. Several flights were necessary before the aerial newsboys gained sufficient skill successfully to bomb the mountain top without entirely losing the week's news down the sides of the forest-covered slopes. As the plane circles over, Everett enthusiastically waves his appreciation from the top of his steel tower. Once a month, when his opportunity comes to send his thanks to the outside world in writing, the officers receive "artillery adjustment" letters with vociferous commendations and scathing friendly criticisms on the successes and failures of their efforts.

---oOo---

CHANUTE FIELD INSTRUCTOR WINS BLUE RIBBON AWARD

At the O.M.I.* International Photographer's Association Convention at Cedar Point, Ohio, on August 4th, 5th and 6th, an exhibit of Mr. Harold Hedger, Instructor in the Department of Photography, Air Corps Technical School, Chanute Field, Rantoul, Ill., won the Blue Ribbon award in its class - Commercial Industrial Photography. This blue ribbon award was won against competition open to all photographers in the world.

The exhibit itself is most interesting both to the photographer and to the layman. It is an eleven by fourteen inch print of the interior of the Projection Printing Laboratory of the Air Corps Technical School, taken under the exceptional conditions of being lighted only by its orange-red safe lights, ordinarily used to guard photographic sensitivity against light effects. With the safe lights as his only lighting medium, Mr. Hedger, using training equipment, made an exposure of one hour and a half, and though his technical skill obtained a print which shows detail, in the darkened room, to a fine degree, including reading matter, hands and figures on a small clock timer, intricacies of printing machines, and even in well defined clearness the filaments of the safe lights themselves.

While the photograph is classed as an "Interior, Industrial," it was made as a school training activity without thought of exhibition. Mr. Hedger desired to demonstrate to photographic students of the Technical School his contention that artificial lights could be photographed directly without halation or diffusion, and used this method of proving it as an experiment. The result justified exhibition, with the gratifying action of the Convention judges in awarding the Blue Ribbon against world competition.

Mr. Hedger was appointed as Instructor in Photography, U.S. Army Air Corps, with assignment to Chanute Field in March, 1931, and is a graduate of the Illinois College of Photography.

* Ohio, Michigan, Indiana.

---oOo---

Lieut. Hez McClellan, flying a gull wing experimental [illegible] Observation plane, recently arrived at Randolph Field, Texas, having flown the distance from Mitchel Field, N.Y. at an average speed of 160 miles per hour. Lieut. McClellan was enroute to California.

INVESTIGATION OF COSMIC RAY AT WRIGHT FIELD

Marguerite Jacobs Heron

A NEW and alien instrument has made its appearance the week before the Eclipse into the laboratories at Wright Field, introduced there by Dr. L.M. Mott-Smith, of the Rice Institute of Houston, Texas, who desired to make experiments with it in connection with flying. The instrument was an electroscope developed for the purpose of measuring the intensity of cosmic rays as they exist in the earth's atmosphere. Discovered about fifteen years ago, according to Dr. Mott-Smith, the cosmic ray has been the subject of wide controversy in scientific circles for the past several years.

Little is known of its source or nature. It is a type of radiation coming from somewhere beyond the earth's atmosphere, but whether directly from the sun or other star, or from interstellar spaces, scientists do not agree. Similar to the "X" and "Gamma" rays, it is not the same as either, and so far no one has succeeded in reproducing it in any laboratory.

Experiments with electroscopes carried to mountain tops have proved that the ray increases in intensity with altitude, and up to 12,000 feet rather accurate measurements of this intensity were obtained. For higher altitude measurements, it was realized, the airplane would have to be called upon, and thus it came about that Dr. Mott-Smith enlisted the aid of the Air Corps, through the Secretary of War.

Several flights were made at Wright Field, and 46 measurements at 5,000, 10,000, 15,000, 20,000 and 25,000 feet obtained, each measurement consisting of an average of ten individual readings. It is felt that these readings are accurate and may remain standard for some time to come. It was interesting to learn that the intensity of the ray at 25,000 feet proved to be about 21 times that at sea level and was still increasing rapidly. The intensity at 25,000 feet was seven times that at 10,000 feet. Another interesting discovery lay in the fact that at 25,000 feet, a one-inch lead case about the electroscope reduced the intensity of the rays by 40 percent. Although lead was known to absorb the rays, the absorption properties proved to be surprisingly high. Measurements were made without the lead case and with lead cases of thicknesses up to two inches. Lieuts. J.F. Phillips and C.D. McAllister served as pilots on the various test flights, Captain Stevens duplicating many of the electroscope readings obtained by Dr. Mott-Smith.

It is not known to what extent further knowledge concerning this cosmic ray may affect existing scientific theories, but data concerning it are constantly enlarged by increased scientific research and the development of more accurate instruments. Professor R.A. Millikan of the California Institute of Technology, one of the foremost investigators of the cosmic rays, believed until recently that the rays' intensity remained the same day and night, until discoveries with improved instruments proved the intensity during the day to be higher. This might seem to throw a partial source of the rays back upon the sun and in connection with that theory it was hoped to obtain added data from the eclipse of August 31st - again with the aid of the airplane.

When Captain A.W. Stevens, piloted by Lieut. C.D. McAllister, went aloft somewhere in the vicinity of Portland, Maine, on August 31st, to obtain photographs of the eclipse at the instance of various scientific organizations, the electroscope formed part of the airplane's equipment. By an ingenious hook-up, the measurement of the intensity of the cosmic rays present in the atmosphere at 27,000 feet, were recorded automatically on photographic film. These measurements were taken before, as well as during the 90 seconds of totality, and the results should prove an interesting indication of the extent of the sun's influence upon the cosmic ray, even if it cannot be hoped through such an experiment to place definitely the source. No measurements of this kind have ever before been made.

The electroscope used in the Eclipse experiments was especially developed by Dr. Mott-Smith and Dr. L.G. Howell, Houston, Texas, for airplane use. To prevent jars or the effects of vibration, it was hung in the cabin by shock absorber cord. Within the small cylindrically formed steel case the intensity of the cosmic ray is measured by the amount of ionization taking place, ionization being produced by cosmic rays in amounts proportional to the strength of the rays. Inside this small steel cylinder is a frame made of invar steel, a material chosen because of its extremely low properties of temperature expansion and contraction. A quartz rod hangs from the top of the

frame and from this are hung parallel two quartz threads or fibers, each .006 millimeters in diameter. A quartz fiber bow is hung at the bottom of the parallel fibers and anchors them by a metal arm to the bottom of the frame. The cylinder is filled under pressure with argon gas, chosen because of all gases it lends itself most easily to ionization. When ionization of the gas takes place the two parallel fibers come closer and closer, a scaled background making clear the extent to the observer looking through a tiny glass window, approximately $\frac{1}{4}$ inch in diameter, in the cylinder case by aid of a powerful microscope which forms part of the instrument. Only under a high-power microscope are the fine quartz fibers of .006 millimeter diameter visible to the human eye. If ionization occurs in a very small amount, the two fibers remain almost stationary.

Very little direct bearing upon the daily life of the average citizen may the existence or nonexistence of such an element as the cosmic ray seem to possess, but if scientists had not through endless searching found now and then a peep hole into the unknown and infinite, and widened that peep hole through endless labor, the average citizen would not today have radio, the X-Ray machine, radium, telephones or many other taken-for-granted things. No one knows how far the cosmic ray peep hole may be widened, but many average citizens are glad for such glimpses as may come their way over the scientist's shoulder.

---cOo---

AIR CORPS PERSONNEL WEATHER THE STORM AT GALVESTON

The maintenance crew, post electricians, telephone men and carpenters at Fort Crockett, Texas, turned from their daily routine work Sunday, August 14th, to repair the damage done by the hurricane the night before. The hurricane originated in the Gulf, spending most of its force about 30 miles west of Galveston, causing a heavy property loss. At the time this was written by the News Letter Correspondent, 39 persons were reported dead and about 200 injured as a result of the storm.

The wind at Fort Crockett reached the velocity of 100 miles per hour, with the barometer dropping to 29:28 at 8:30 p.m., Saturday. Storm warnings were published and posted Saturday morning. A heavy sky overhead with frequent coastal showers gave the warnings of the approaching storm. At about 10:00 a.m., visiting ships began to arrive, but the airmen were told to find a more suitable place to take their planes, as no hangar space was available. This precaution probably prevented the destruction of several of Uncle Sam's choice airplanes. Besides many precautionary measures taken by various departments of the post, the transportation department filled all available water tank-trucks with water, which would have been of much value had the island been covered with salt water. It so happened that many of the hurried precautions proved unnecessary, but they were well based and would have been put to good use had the brunt of the storm struck Galveston.

At noon Saturday, orders were issued that all enlisted personnel would stand by for further orders. Roads leading to the beaches were closed and guarded by sentries furnished by the post. A radio station of Galveston furnished regular hourly reports concerning the whereabouts of the approaching storm, the height of the tide and the necessary precautions to be taken by civilians regarding live stock and property. At 2:00 p.m., the wind velocity continued to rise, with a steady downpour of rain. Orders were issued that all important records be brought to Headquarters Building for safe keeping. The meteorological men were very busy, giving the Adjutant readings from the barometer and anemometer. To pass the time away and keep more pleasant thoughts in one's mind, the day rooms were filled with people playing bridge and other card games and every other sort of indoor amusement.

Power lines were blown down, leaving the city and post in complete darkness. Candles and lanterns were brought out of storage, cleaned and put to use. No one was excited and perfect order was maintained. Word was received that the force of the storm was due to hit some 75 miles west of Galveston, but the barometer was reading around 29:30 at the moment. At about 7:30 p.m., organizations quartered in wooden buildings were told to move to the more substantial buildings. The 13th Squadron and the 60th Service Squadron moved to the Harbor Defense building. Headquarters Detachment and the Band went to Headquarters building. No bedding was carried with the men, so the desk tops and floors provided the only places to sleep. The floor was partly covered with water, making it a little uncomfortable.

Around 8:30 p.m., our share of the wind reached its highest velocity, with the barometer going down to 29:28. Windows were doing a heel and toe dance and a few gave way under the strong pressure of the wind and rain. Figures of men could be seen groping around the dim lantern light among the desks in the personnel office. About thirty minutes later, the barometer began to rise and the wind velocity began to drop. The wind rose again about an hour later and then decreased slowly.

---oOo---

17TH SQUADRON RETURNS FROM CAMP SKEEL

The 17th Pursuit Squadron recently returned to its home station, Selfridge Field, Mt. Clemens, Mich., after spending nearly a month at Camp Skeel, Oscoda, Mich., in aerial gunnery training. The consensus of opinion of members of the Squadron was that Oscoda is a darn good place, but that it is good to get home. Camp Skeel, like all camps, is a good place to relax and acquire a sunburn, but possesses none of the luxuries of home life. All of the scenery of that part of Michigan is built on a foundation of fine white sand which has an undesirable tendency to drift into all sorts of places where it is not wanted. One place where the sand is desirable is on the excellent beach on the shores of Lake Huron, only a couple of miles from camp. The camp denizens spent most of their leisure hours soaking up ultra-violet rays on said beach.

From a training point of view, the 17th's stay at Skeel was highly successful. Every pilot of the command fired for practice and record both on ground and tow targets. The Squadron qualified one hundred percent, and the percentage of scores in the expert class was unusually high. The Squadron Statistician has not yet completed his analysis of the Squadron scores but confidently predicts that the 17th will qualify ninety percent of its pilots as "Experts."

At present the 17th is engaged in completing its gunnery course by running low altitude bombing on the new bombing range at Selfridge. While the new regulations, prohibiting diving on the bomb target at a greater angle than 45 degrees, tend to hamper high scores in bombing, it is believed, nevertheless, that the scores compare very favorably with those of last year.

---oOo---

WRIGHT FIELD FLIERS RETURN FROM MAPPING PROJECT IN FLORIDA

Captain Bruce Hill and Lieut. J. F. Phillips, of the Aerial Photographic Unit, Materiel Division, Wright Field, returned recently from a photographic mission in Florida. This mission consisted in obtaining 5-lens aerial photographs for the proposed cross-Florida ship canal which is to be started in the near future. Approximately 7,000 square miles were photographed in a period of about a month.

The photographs are to be used in reconnaissance surveys of the various routes across the State of Florida and for the purpose of preparing a precise map of the route finally selected. The projected Florida Canal will be one of the largest in the world and capable of carrying more traffic than the Panama Canal. The probable route of the canal will lie somewhere between Jacksonville and Oscala, Florida.

---oOo---

MARCH FIELD UNITS TRAIN AT ROCKWELL FIELD

After a month's intensive training in bombing and aerial gunnery at Rockwell Field, Coronado, Calif., the 11th Bombardment and the 95th Pursuit Squadrons left for their home station, March Field, Riverside, Calif.

It will be remembered that these two outfits were formerly stationed at Rockwell Field before moving to March Field to become units of the 1st Bombardment Wing, which was organized at March Field in November, 1931. The 11th Bombardment Squadron, under command of Capt. Charles H. Howard, is a unit of the 7th Bombardment Group, while the 95th Squadron, under Lieut. Leo H. Dawson, belongs to the 17th Pursuit Group.

These two units were replaced at Rockwell Field by the 9th Bombardment and the 34th Pursuit Squadrons two days later, coming also from March Field, and occupying the same camp site on North Island. The 9th and 34th Squadrons immediately started on a month's program of intensive training in bombing and gunnery.

NEW ENGLAND RESERVES COMPLETE TRAINING CAMP

The officers of the Air Corps Reserve from New England recently completed their first training camp held in New England. Camp was established at Marston's Mills Airport on Cape Cod, Mass. With Captain Glenn C. Salisbury and 2nd Lieut. B.F. Kelsey as instructors, the Reserves put in two strenuous weeks of duty. Many maneuvers were completed and tactical missions worked out.

Among those at the camp were: Majors Howard Nestor (C.O.) and Bartlett Beaman (Executive Officer); Captains Byron Switzer; Charles Clark; George Lusk; Frank C. Crowley; Robert A. Nagle; Edward A. Holderman; John A. Langley; Edward Fairfield; Walter Cleveland; Charles Rohrbach; George Chadderdon; 1st Lieuts. Ephraim Ingels; Edward Parker; Bernard Rose; John Wamsley; Ralph Warriner; Horace White; Crocker Snow; Paul S. Smith and Harry D. Copland; 2nd Lieuts. Walter Steet; Olaf Pierson; Herbert Horton; John E. Sandow; Mark Hopkins; Winthrop Towner; Andrew Ivancff; William Tanner and Stanley Winch.

Major Nathan N. Linius, Medical Corps Reserve, was the Flight Surgeon on the job to safeguard the health of the camp.

The airplanes used were two PT-3; two PT-2B and ten of the O-1 type of service ship, five of which came from Mitchel Field and were flown to the camp by the Reserves.

Splendid results were obtained in gunnery, with the high score obtained by Lieut. Horace White - 262. Lieut. Crocker Snow followed with a score of 220 and Captain Frank C. Crowley with 215.

Camp was broken on August 20th, and the Reserves returned the ships to Boston and Mitchel Field. They proceeded to their homes satisfied that the camp was ideal in every respect.

---oOo---

INDIAN WRITINGS PHOTOGRAPHED

Not to be outdone by the embryonic scientists in the 11th Squadron, March Field, Calif., who aided Dr. Millikan in his important cosmic rays tests, Lieut. Minton W. Kaye, Commanding Officer of the 23rd Photo Section, chose anthropology as his field of scientific endeavor. In cooperation with Ethnologist Arthur Woodward, of the Los Angeles Museum, and Mr. George Palmer, a civilian flyer who had reported strange figures painted on the ground near Blythe, Calif., Lieut. Kaye organized an expedition to investigate. Accompanied by Sergeant Stephen McAlko and equipped with cameras, Lieut. Kaye flew to Blythe.

Crude images, probably drawn on the ground by an ancient tribe of Indians, were found, ranging in size from 50 to 167 feet. One is of a man with his arms outstretched. His neck is long, head small and round, knees knotty, and feet short and thick. A huge circle surrounded his body, bisecting his legs just below the knees. Another figure was found, 50 feet long, resembling a horse. Several other mysterious designs were found.

Three groups of figures were found. In each there is the colossal figure of a man, an animal, and a snake. Dark brown and light colored pebbles, varying in diameter from one to five inches, were the materials used by the artists who left records which have remained unknown for nobody knows how many centuries. The figures are so immense that only from a height can they be recognized. There are no hills close enough to permit detection. Undoubtedly, many people have ridden through the figures without recognizing them, so it is believed that they were not designed for the sake of art but rather for religious or ceremonial purposes.

From studies of the aerial photographs, which give definition impossible to obtain from the ground, scientists hope to discover clues that will help them unravel the mysteries of the Colorado mesas.

---oOo---

At sundown on August 26th, the 94th Pursuit Squadron came roaring across Lake St. Clair in a long dive towards Selfridge Field, Mich. They were coming home after three weeks of strenuous gunnery work at sandy Camp Skeel in Northern Michigan. The Squadron, under the command of Captain A.B. Balland, had made an excellent gunnery record under the handicaps of poor weather and a shortening of practice time due to changes in the training program of the First Pursuit Group.

MORE ABOUT THE COSMIC RAYS

DR. Robert A. Millikan, world-famous scientist, and head of the California Institute of Technology at Pasadena, Calif., recently completed at March Field, Riverside, Calif., a series of important tests on the intensity of cosmic rays at various altitudes. Spurred by the controversy between the two schools of thought - one maintaining that the rays are emitted from the sun and deplete the energy of that body; and the other, led by the scientist himself, believing that the rays come from other parts of the stellar universe and are perpetual in their nature - Dr. Millikan is attempting through a series of accurate tests to learn more of the nature of these important rays.

A supersensitive cosmic ray electroscope, automatically recording the intensity of the rays on movie film, and other highly accurate self-recording instruments such as clock and barograph, all developed in the Pasadena laboratory, were encased in 500 pounds of lead as a protection against conflicting rays. This "lead ball" was taken to Lake Arrowhead for preliminary tests before being installed in Army airplanes, but a mishap resulted in the entire ensemble of instruments - lead and all - being lost in the bottom of the lake. The eight months of laboratory work necessary for the construction of the instruments was not lost, however, for the experience gained enabled the physicist and his staff, by working day and night, to complete a new set in three weeks' time.

The instruments were then suspended by a network of shock absorber cords in the tool box of a "Condor" Bomber of the 11th Bombardment Squadron, and then the fun began for Lieut. Howard and his pilots and crews. Intermittent day and night missions continued through four days, in both good and bad weather. Oxygen tanks were necessary, as the pilots and crews flew to maximum altitudes. An average of five hours was required on each mission, the pilots remaining 45 minutes at each of the four required altitudes - 10,000, 14,000, 19,000 and 21,000 feet.

Dr. Millikan and his assistants expressed keen delight with the skill with which the missions were flown and the successful results obtained. The following statement was given to the News Letter Correspondent by Dr. Millikan:

"The first purpose of these tests is to measure accurately the rate of variation of the cosmic rays with altitude at higher altitudes than have yet been obtainable on mountain peaks. This is the first time it has become possible to make accurate measurements of this sort in airplanes, for Dr. Neher, Dr. Bowen and I have developed at the California Institute of Technology, new instruments, which are independent of vibrations and which should therefore yield accurate results in airplanes up to altitudes above 20,000 feet. These are higher than those at which the most accurate measurements of cosmic ray intensities have thus far been obtained.

Again, accurate measurements made at these altitudes, if repeated in widely different latitudes, also should furnish crucial data as to the nature of these radiations. The latitude of 34 is very suitable for one such test. It is hoped then to repeat these observations in other latitudes.

Also, the question as to whether the sun has any influence whatever on the cosmic ray intensities at high altitudes, as claimed by some, - a very important point in unraveling the nature of the rays - should be capable of more unambiguous determination through day and night high altitude flying than through methods which have heretofore been available.

In the present tests the pilots are endeavoring in each flight to hold their altitudes constant for three quarters of an hour at each of the altitudes 10,000 feet, 15,000 feet, 19,000 feet and 23,000 feet. The instruments are all self-recording, the barograph certificated by the Bureau of Standards, recording at all times during the flight the exact altitudes, independently of the pilot's instruments and the recording cosmic ray electroscopes yielding the corresponding cosmic ray intensities and temperatures.

The Royal Canadian Air Force is cooperating with these tests in Canada as the United States Army Air Force is doing in this country."

---oOo---

First Lieut. John H. Dulligan, Commanding Officer of the 73rd Pursuit Squadron of March Field, Calif., is satisfied with nothing short of perfection in his instruction methods within his organization. He has had constructed three flights of miniature airplanes, painted in flight colors, with which he demonstrates methods and theories of tactics before taking his squadron into the air for a training flight. This method has proved highly successful.

AERIAL PHOTOGRAPHY AT HIGH SPEED

By the News Letter Correspondent

FIRST Lieut. George W. Goddard, Air Corps, Director of the Department of Photography of the Air Corps Technical School, Chanute Field, Ill., with Master Sergeant G.B. Gilbert of the department, recently spent two periods of special duty at Selfridge Field, Mich., for the purpose of making a mosaic of the Selfridge Field area, and of making a series of 100 photographs of the First Pursuit Group in action, both on the ground and in the air. The photographs of the group in its various aerial formations are of particular interest and are excellent from the viewpoints of both the flying and the photography. The flight formations are in perfect alignment. Lieut. Goddard speaks much of the cooperation and assistance given him by the Commanding Officer of Selfridge Field, and the Group Commander, together with their assistants. He states that taking photographs of a Pursuit organization, through its various evolutions in the air, is a distinctive profession in itself. He says that if anyone wants to experience a new thrill, he should climb into the rear seat of a P-16, with an aerial camera for a playmate, and let the pilot put the ship into a dive, in the meantime holding the camera out for oblique photographs.

According to Lieut. Goddard, the situation is fairly stable until the speed of 200 miles is reached, the photographer managing the camera without superhuman effort, but when 300 miles an hour is reached, the camera attempts to climb into the seat. Then (still according to Lieut. Goddard), when the speed becomes 400 miles, the photographer is willing to let his camera have the seat, while at 500 miles an hour, he is holding himself in with a strangle hold around the camera as an anchor. However, (again according to Lieut. Goddard), the real fun does not start until the diving speed reaches 800 or 900 miles per hour, with the photographer still riding backward, when he loses all thoughts of the camera, his whole effort being spent in pushing his eyeballs back in place as fast as they pop out.

---oOo---

TEXAS NATIONAL GUARD AIRMEN GO IN CAMP

The 36th Division Aviation, Texas National Guard, participated in the Division's 15-day annual field training, August 6th to 20th, at Camp Mulen, Palacios, Texas. Twenty-one officers and 84 enlisted men put in a strenuous 15-day training period under the blazing Texas sun. But three officers and two enlisted men failed to make the camp, which is the best attendance record for the Squadron. The 16 pilots in attendance at camp qualified from marksmen to experts in aerial gunnery. The full allowance of machine gun ammunition was expended and 200 practice bombs were dropped. The Squadron had at camp six O-38's and one BT-1 and O-17. Day and night flying missions were executed, the latter for artillery fire control by radio. Missions were accomplished with both the Infantry and Artillery radio, message dropping and pickups, and panel work to practice the Division signal units.

The radio equipment worked perfectly during the day time, but considerable difficulty was experienced at night due to being on the broadcast bands and the numerous night stations yammering away. Recommendations were made to the signal officer to equip the Division signal units, including the planes, with short wave sets working around 70 to 90, so as to avoid the radio broadcasting and ship to shore bands. Several photographic missions were also performed.

The camp was not without its excitement. On Saturday, August 13th, a tropical hurricane swept in from the Gulf. The wind reached a velocity of 75 miles, covering the Gulf coast from Port Arthur down as far as Corpus Christi. One can never tell what a tropical hurricane will do, so the 2,000 tents in camp were struck and piled in the mess halls and storage buildings. This took but 30 minutes. The Squadron planes took off for Duncan Field, San Antonio, where they were securely housed. No damage occurred to the camp, but the surrounding country was a wreck, buildings, trees, poles and freight cars being blown away and demolished. Some of the towns in the path of the blow were 60 percent demolished.

During the blow, the Squadron's home hangars (two of them) on the Houston Airport were partly destroyed. The commercial hangar on the north end of the field, a large steel affair, was totally wiped out, together with eleven commer-

cial planes. The Guard hangars, rented from the Houston Airport, were of steel frame, welded with galvanized sheeting, closed at one end and open at the other, no doors being provided. A movement is afoot to replace the Guard hangars with Army type construction, open at both ends and with doors.

The Division Camp at Palacios, on Tres Palacios Bay, about 100 miles southwest of Houston, is an ideal location for the 7500 men who attend the annual training camp. Boating, fishing and surf bathing provide amusement and entertainment.

Captain Vincent J. Meloy, Air Corps Representative, Militia Bureau, Washington, D.C., was a visitor at the camp the final week end, piloting Brig.-General George E. Leach, Chief of the Militia Bureau, on his inspection tour.

---oOo---

LONG DISTANCE NIGHT AND DAY FLIGHT IN TRAINING PLANE

Just what can be expected of the Air Corps in an emergency, even with training planes, was demonstrated recently by Lieut. Elmer J. Rogers, Jr., Flying Instructor, Randolph Field, Texas. Selecting a plane at random from the scores in service daily at the training school, Lieut. Rogers flew the distance of 1,800 miles from San Antonio to Boston, Mass., in 17 hours, 45 minutes. Lieut. Rogers obtained permission from the Chief of the Air Corps to make this aviation training flight. A mechanic accompanied the Flying Instructor in the training plane, same having been flown the preceding day by one of the students at the field.

The San Antonio flyer took off from Randolph Field at 3:10 a.m., and headed for Little Rock, Ark., where he landed for fuel. Landings were also made at Dayton, Ohio, and Middletown, Pa. He then went on to Boston of tea-party fame. The trip, however, was decidedly no tea-party for Lieut. Rogers, since a large part of the flight was through the blackness of night, which required valorous nerves in guiding his plane over territory unknown to him. Of the 17 hours, 45 minutes flying time, 8 hours were flown during the night, when sole reliance was placed on the night flying instruments. The total elapsed time was 19 hours, from which 75 minutes were deducted for landings, refueling and take-offs.

Lieut. Rogers set his plane down on Boston Airport at 12:15 a.m., completing the impromptu flight without a single motor, mechanical or human error, and chalked up an average speed of about 100 miles an hour for the entire trip in a plane not especially fast and built only for student training work. Returning to his home field he learned of his promotion to First Lieutenant.

---oOo---

NEW CONSTRUCTION AT SELFRIDGE FIELD

Recent visitors to Selfridge Field commented on the large amount of new construction completed there. Within the past year, the hangars and all of the technical buildings were completed and most of them are now occupied by the activities for which they were designed. At present, Lieut. Walters, Constucting Quartermaster on the post, is supervising the installation of all the utilities pertaining to past construction. Roads are being laid in all directions, and in a short time the familiar Selfridge Field mud will be a thing of the past. A beautiful flag pole was erected in front of the Headquarters and post Operations Building, and the sidewalks connecting the Headquarters building with the road laid down. An interesting feature of this building is a giant wind "T" which is being installed on the roof. The "T" will be electrically connected to a device downstairs in the Operations Office which will indicate at all times the direction of the wind aloft.

A piece of construction, especially welcome to pilots, now being completed is the night lighting facilities for the landing field. Two giant batteries of lights, one on the northeast and the other on the south side of the field, will soon spread a blanket of light over the field after night fall and allow the 1st Pursuit Group to perform its quota of Individual and formation night training.

Within a few months, Lieut. Walters expects to begin work on the final stage of the Selfridge Field building program. The following buildings will be erected and, when completed, will finally put Selfridge in the category of a permanent post, with none of the old wooden war-time shacks left as reminders of the great conflict: Gym and theatre (combined), Q.M. Maintenance Building, Post Exchange, Officers' Mess, Enlisted Men's Service Club, Bakery.

THE CATERPILLAR CLUB

The roster of the Caterpillar Club is slowly mounting to the 500 mark, and the number of emergency jumps made since this mythical organization sprang into existence is very close to that mark. According to the best information available, the lives of 478 Americans were saved thus far through emergency parachute jumps, and a total of 496 jumps made, 18 being repeaters.

Col. Charles A. Lindbergh is still the Supreme Commander of the Caterpillar Club with four jumps. Other high officials who passed their second degree are the Air Corps contingent of Major James H. Doolittle (Air Reserve), Captains Frank O'D. Hunter, James T. Hutchison, Lieuts. Arthur R. Kingham, James A. Ronin, John G. Fowler, Sgt. Fred P. Miller; Lieut. Frederick M. Trapnell, U.S. Navy; Air Mail Pilots Harry Sievers, Samuel J. Samson, Verne E. Treat, James Rutledge; Civilian Pilot E.E. Dryer, and the late Lieut. Eugene H. Barksdale and Al Wilson.

If Caterpillar Club statistics count for anything, it may be said that airplane accidents are steadily decreasing in number. In the period from January 1 to September 15, 1930, a total of 101 emergency parachute jumps were made. For the same period last year, the jumps numbered 63, while this year the figures disclose 51 jumps. "Slump" is an unwelcome word these days, but it does sound good so far as concerns the Caterpillar Club.

Trapped in a burning plane only 500 feet above the swollen waters of the Rio Grande at Fort Ringgold, September 2nd, 1st Lieut. Joseph H. Hicks and 2nd Lieut. Edwin S. Rawlings, of Brooks Field, Texas, escaped with minor injuries by resorting to their parachutes, landing on the Mexican side of the river. The two officers had just taken off from the airdrome at the post when the motor started to miss. The wind was from the north, and as they attempted to circle to land on the field again, the motor caught fire just as the plane was over the river. The fire quickly spread into the front cockpit where Lieut. Rawlings was piloting the ship. He was burned on the face and hands before he could unhook his safety belt and climb over the side of the cockpit. As Lieut. Hicks jumped, the plane swung around and he received a cut on the head. The north wind carried them across the river, which was beginning to feel the effect of the flood waters farther upstream. They landed safely, and the plane crashed and burned about 200 yards south of the river.

Lieut. Rawlings had three panels torn from his parachute as it hit the tail surfaces of the plane. Lieut. Hicks slipped his chute to prevent his landing on the burning plane. Mexican authorities in the immigration service hurried to the aid of the American officers and, waiving the usual formalities upon noting that each of them was in need of medical attention, escorted them to the river and sent them across to Fort Ringgold where they were treated.

Sergeant Lionel Edwards, 94th Pursuit Squadron, Selfridge Field, Mich., had the unusual experience of falling out of an airplane while riding as gunner for Lieut. Paul Blanchard in a P-16 airplane. During a barrel roll, Sgt. Edward's safety belt became unlatched, whereupon he was dropped into the "ozone." The parachute worked, and Sergeant Edwards landed safely in a cabbage patch near Selfridge Field. He was unhurt, but extremely disconcerted. Lieut. Blanchard's feelings are not of record.

On August 22nd, Lieut. John G. Fowler fell out of his plane while practicing acrobatics. Lieut. Fowler, an instructor on the Primary Stage at the Air Corps Training Center, Randolph Field, stated that while practicing a slow roll, his safety belt snapped and he found himself out in mid air. He pulled his rip cord and floated safely to earth, while his plane crashed and burned. The accident occurred while he was flying at an altitude of 2,500 feet. He was flying a YlPT-11B, which is equipped with one of the new type metal belts. Investigation of the wreck revealed that the belt had not been broken, and that Lieut. Fowlor inadvertently released it in some way.

On July 7th, the peaceful routine of Clark Field, Pampanga, P.I., was in-

terrupted by a couple of airplanes tumblin down from 3,000 feet and smacking the ground right in the middle of the field. This undesirable treat to the nerves was the result of a collision by Lieuts. Fair and Ronin while flying formation. Both pilots got out promptly and safely in their parachutes. Fair was pretty badly shaken up and received a sprained ankle upon striking the ground in his chute.

---oOo---

WRIGHT FIELD PERSONNEL PHOTOGRAPH ECLIPSE

Besides Captain Stevens and Lieut. McAllister, who flew to Portland, Maine, for the Eclipse, other Wright Field personnel who flew to the region of totality were Major W.E. Kepner and Capt. Dache M. Reeves, and Lieut. H.P. Rush and W.C. McNeill of the Armament Branch. All were greatly impressed by the spectacle and obtained photographs of interest and value. Captain Stevens developed his photographs, taken for the National Geographic Society, in Washington, returning to the field on September 9th.

Of all the pictures obtained, Captain Stevens was most enthusiastic about the one showing the shadow of the moon, elliptical in shape, as it lay on the clouds beneath the airplane. The diameter of this phenomenon was so great that the exposure had to be made in two parts, pieced together in the completed print, in order to encompass it all on films. On his return, developments of film were immediately started which would give the measurements of the cosmic rays during the Eclipse, special equipment for the obtaining of which Captain Stevens carried as auxiliary equipment in his airplane. Dr. Lewis Mott-Smith also returned to the field after the Eclipse, and will remain to assist in final checking up of cosmic ray measurements and data.

Every photographer wanted to obtain pictures of the Eclipse. All would have preferred to get them where the real party was held - that is, in the location of totality. Since this was not possible for the men of the Aerial Photographic Unit at Wright Field, they did the next best thing and rigged up a camera of extremely long focal length - 90 inches - so that they might get as long an image of the rare phenomenon as possible. The camera consisted of a 90-inch piece of metal tubing, $2\frac{1}{2}$ inches in diameter and 1/16 inch in wall thickness. In one end of the tubing they inserted a $1\frac{1}{2}$-inch diameter lens; in the other end, a 4-inch by 5 inch film pack holding orthochromatic film. Exposures of 1/25th of a second were made by mounting a compound shutter in front of the lens. A red filter (gelatin) was used in front of the lens for cutting out all but red rays. This gave an image of 7/8 inch in diameter, probably the largest obtained in this part of the country without the use of a telescope. The full cycle of the Eclipse in twenty views was successfully photographed.

---oOo---

NAVY SHOWS PICTURES TO THE ARMY

Through the courtesy of the Welfare Officer, Naval Air Station, which lies adjacent to Rockwell Field, Calif., two reels of sound motion pictures of Air Corps subjects were shown in the theatre of the Naval Air Station recently. Many interesting scenes of various Air Corps organizations and posts throughout the country were shown, as well as the scenes of actual flying missions, which included pictures of March Field units dropping food to snow-bound Indians in Arizona, bombing practice, parachute jumps, aerial reviews and things of general interest to Air Corps personnel. The pictures as a whole proved to be very interesting and entertaining, and the soldiers of Rockwell Field are very grateful to the Navy for their courtesy and kindness.

---oOo---

A recent extended avigation flight of interest was completed by Lieuts. W.C. Farnum and C.B. Stone, of Chanute Field, Ill. On July 20th, the two officers, in a BT-2 plane, departed from Chanute Field, with their ultimate destination as Crissy Field, San Francisco. Their itinerary included: Muskogee, Okla.; Dallas, San Antonio and El Paso, Texas; Tucson, Ariz., Rockwell Field, Los Angeles, March Field and Crissy Field, Calif. After remaining at Crissy Field for two days, the officers departed on their return trip over the same route.

Lieuts. Farnum and Stone, in addition to carrying out their original purpose of avigation training, located fifteen new landing fields along the route, which they carefully indicated on maps as suitable for landing military aircraft. Their fastest single flight was from Muskogee, Okla., to Chanute Field, the distance of 500 miles being covered at an average speed of 138 miles an hour. The airplane and engine functioned perfectly throughout the long flight with its varied conditions. The two officers state that the outstanding memory of the entire flight is the extraordinary courtesy with which they were received and entertained at Air Corps Stations, together with aviation service of the highest order.

WAR DEPARTMENT ORDERS AFFECTING AIR CORPS OFFICERS

Changes of Station: To Panama Canal Zone: 2nd Lt. Ernest H. Lawson, from Kelly Field; Capt. Stephen J. Idzorek, from Ft. Crockett; 2nd Lt. Ralph P. Swofford, Jr., from Randolph Field; 2nd Lts. Carl J. Crane and Howard McM. Turner, Randolph Field; 2nd Lts. Roland C.S. Akre, Langley Field; Jarred V. Crabb, Selfridge Field.

To the Philippines: 1st Lt. Lee Q. Wasser, Mather Field; 1st Lt. James W. Andrew, Randolph Field.

To Hawaii: Capt. Philip Schneeberger, Scott Field.

To Barksdale Field, La.: Capt. Edward V. Harbeck, Jr., San Antonio Air Depot; 1st Lt. Earl W. Barnes, Panama.

To Maxwell Field, Ala.: Capt. Byron T. Burt, Jr., Hawaii; 1st Lt. Charles E. Thomas, San Antonio Air Depot.

To New Haven, Conn.: 1st Lieut. Geo. H. Sparhawk, 2nd Lt. Daniel B. White, Chanute Field, for duty as students, Sheffield Scientific School, Yale Univ.

To Boston, Mass.: Captain Ray A. Dunn, Middletown Air Depot, for duty as student, Babson Institute; Lieut.-Col. Alfred H. Hobley, Office Asst. Secretary of War, for duty as student, Graduate School of Business Administration, Harvard.

To Pasadena, Calif.: 1st Lieut. Paul H. Kemmer, Materiel Division, Wright Field, for duty as student California Institute of Technology.

To Kelly Field, Texas: 2nd Lt. Thomas L. Bryan, Jr., Panama.

To Wright Field: Captain Howard Z. Bogert, Mitchel Field.

To Washington, D.C.: Capt. Guy H. Gale, Indianapolis, Ind. To Walter Reed Hospital for observation and treatment.

To Cambridge, Mass.: Capt. Omer O. Niergarth, Bolling Field, for duty as student, Graduate School of Business Administration, Harvard University.

Transferred to the Air Corps: 2nd Lieut. Wm. T. Hefley, Corps of Engineers, July 19th, rank from June 9, 1928.

Detailed to Air Corps: To Randolph Field, Texas, for flying training - 1st Lieut. George D. Pence, Field Artillery; 2nd Lieuts. Harry H. Geoffrey, Field Artillery; Arville W. Gillette, Infantry.

Relieved from Detail to Air Corps: 2nd Lieut. James F. Stroker, Field Art.

Promotions: To Captain, rank Sept. 1, 1932 - 1st Lieuts. Lloyd Barnett, John A. Laird, Jr., Bushrod Hoppin, Charles W. Steinmetz, John M. Davies, Walter T. Meyer, Reuben D. Biggs, Wendell B. McCoy, James E. Duke, Jr., Martinus Stenseth, Rex K. Stoner, James B. Carroll; to 1st Lieut.: 2nd Lieuts. John T. Sprague, Frederick A. Bacher, Jr., Ward J. Davies, Yantis H. Taylor, George L. Murray, Claire Stroh, F. Edgar Cheatle.

Retirements: 2nd Lieuts. Thomas J. Holmes (as 1st Lieut.); 1st Lieut. Hjalmar F. Carlson. Disability incident to the service.

---oOo---

HIGH SCORES FOR MARCH FIELD AERIAL MARKSMEN

March Field is justly proud of its 1931-32 bombing and gunnery records. The 43 officers who dropped bombs for record with the 9th, 11th and 31st Bombardment Squadrons all made EXPERT ratings. The Squadron records were as follows:

9th Squadron - Average - - 1787.7; High score, Capt. H.D. Smith - - - 1928
(Lieut. Birrell Walsh, pilot)

11th Squadron - Average - - 1863.1; High score, Lieut. J.S. Mills - - 1935
(Lieut. Ivan Farman, pilot)

31st Squadron - Average - - 1811.8; High score, Lieut. Allen P. Shelly 1908
(Lieut. Calvin B. Simmons, pilot)

The 9th and 31st Squadrons were newly organized last year and did not have sufficient time to fire gunnery for record. The 11th Squadron qualified twelve officers as EXPERTS and four as SHARPSHOOTERS, with none failing to qualify.

Among the Pursuiters, the following records were made in gunnery:

73rd Squadron - Lieut. H.C. Minter - 1068.9; Squadron average, 760.2
34th Squadron - Lieut. J. C. Jensen- 735; Squadron average 514.2
95th Squadron - Lieut. D.D. Graves - 1232.9; Squadron average 846.5

On the basis of the above scores, Lieut. Graves was sent to the Matches last year and won first place in the national contest.

With the improvement in bomb sights, airplanes, and methods of bombing instruction, scores have steadily improved since the World War. The opinion prevalent among March Field pilots seems to be that the present 1500 score required for an EXPERT rating in bombing is too low to be an incentive for the most intensive effort. The majority of officers of the 7th Bombardment Group have had less than two years of experience in bombing, yet the average scores were well over the 1800, and not an officer, regardless of how scant his training, failed to make the "coveted" rating.

EXTENDED AVIGATION MISSION, LANGLEY TO MARCH FIELD

Piloting a Keystone B6A Bomber, 2nd Lieuts. M.C. Bison and H.G.Montgomery, Jr., 96th Bombardment Squadron, returned to Langley Field following an extended avigation training mission to Riverside, Calif., which was completed in an elapsed total flying time of 64 hours. They were assisted by their able crew chiefs, Sergeants Maul and Kauffman.

Excellent landing fields enroute were reported, with the exceptions of Roberts Field in Birmingham, Ala., and Lowery Field, Denver, Colo., which are too small for the take-off of a Bomber fully loaded. The average altitude of flight from San Antonio, Texas, to March Field, Calif., was 5,000 feet; and from Mather Field, Calif., to Cheyenne, Wyoming, 12,000 feet. When fully loaded, some difficulty was experienced in gaining altitude, but when once obtained no further trouble was encountered in cruising.

The pilots advised the taking of winter flying clothes on a trip of this nature, inasmuch as the mountains enroute made it necessary to gain high altitudes, with unusual cold weather being experienced. Very splendid courtesy was extended the officers and crew throughout the flight, especially by the Curtiss-Wright people at the Alameda, Calif. Airport.

It is interesting to note the ease with which the flight was accomplished, in comparison with the age of the "Early Bird."

---oOo---

96TH SQUADRON FLIES TO WILMINGTON, N. C.

The City of Wilmington, N.C., extended an enthusiastic welcome to the 96th Bombardment Squadron from Langley Field, Va., upon the occasion of its recent visit in conjunction with the training program of the 2nd Bombardment Group.

The airport at Wilmington is ideally situated and large enough to accommodate a Bombardment squadron. Railroads, communication lines and other necessary requirements are convenient. The airport showed no signs of softness, after 4 days of continuous rain. It was estimated that approximately 20,000 residents of the city visited the Airport during the course of the week-end and inspected the airplanes. The officers and enlisted men took up their quarters at Wrightsville Beach and enjoyed the splendid swimming and pleasant hospitality.

The problem assigned the Squadron, commanded by Capt. J.P. Richter, and comprising nine Keystone Bombers, manned by 18 officers and as many enlisted mechanics, was to occupy an advanced airdrome at Wilmington.

---oOo---

RADIO BROADCASTS BY MARCH FIELD DISCONTINUED

With the March Field Band disbanded, the regularly scheduled radio broadcasts which have been conducted for the past three months over Radio Station KFXM, San Bernardino, Calif., were discontinued. The Army Radio Hour as conducted, included with the band program, a 15-minute address by some March Field officer on Air Corps subjects. The following officers, with subjects as indicated, participated in the programs:

Major J.T. McNarney	- The Mission and General Organization of the Air Corps.
Lt.-Col. H.H. Arnold	- Development and Procurement of Aircraft.
Capt. B.J. Tooher	- Selection and Training of Air Corps Pilots.
Lieut. J.A. Madarasz	- Selection and Training of Air Corps Enlisted Personnel
Major Carl Spatz	- Specific Organization of the Air Corps into Pursuit, Attack, Bombardment, Observation, etc.
Lieut. C.H. Howard	- Mission of Bombing.
Capt. F.O'D. Hunter	- Mission of Pursuit.

---oOo---

DEATH OF LIEUT. SANBORN

The Third Pursuit Squadron, Clark Field, Pampanga, P.I., received a sudden shock when Lieut. E.A. Sanborn met with a fatal accident due to the premature explosion of a 100-pound bomb. At the time the explosion took place, the Squadron was demonstrating gunnery and bombing to a large crowd at Clark Field, composed of visiting Air Corps officers, and officers and men from other branches.

Lieut. Sanborn released his second bomb from a P-12E while diving toward a target on the ground, and it exploded in the air immediately beneath his ship. The explosion was attributed to the malfunctioning of the nose fuze on the bomb, and the matter is receiving the attention of the Ordnance Department.

The Squadron feels deeply the loss of Lieut. Sanborn, who has shown excellent ability both as a flyer and officer.